



HCAL in ORCA : POSSIBLE IMPROVEMENTS



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- ★ **QIE (charge integrating range encoing) quantization of the HCAL response**

- **Special treatment of HF**

- **Photostatistics effect (especially in HF)**

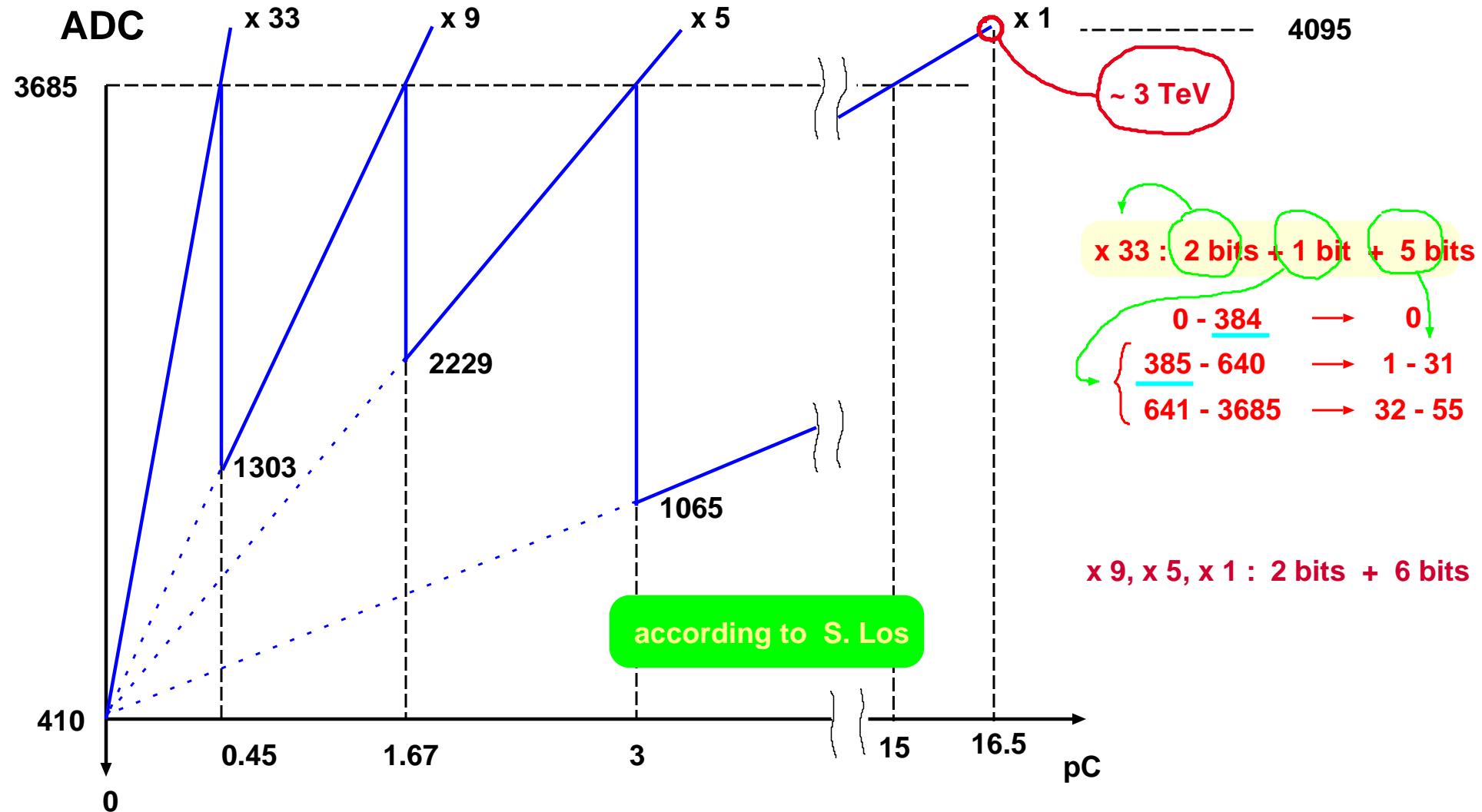
- **Time jitter :**
 - ▶ optical path length variation
 - ▶ LHC clock jitter

- **Correlated (between time samples) noise**

- **Calibration of the electronics**



HCAL QIE





QIE in HcalRealistic ?



class HcalRealisticReadout : public CellReadout

```
{  
public :  
    ...  
    const CaloFrontEndSimulator* ADC () const { return & hcalfrontend ;}  
    const CaloVCoder* Coder () const { return &coder ; }  
    ...  
  
private :  
    ...  
    HcalRealisticCoder coder ;  
    HcalRealisticFrontEnd hcalfrontend ;  
};
```

....Coder -> convert (...) ; is used in public
method CaloDataFrame process (...)
of class HcalRealisticFrontEnd

class HcalRealisticCoder : public CaloVCoder

```
{  
...  
  
private :  
    CaloDataFrame convert (const CaloTimeSample& ts, const double em) const { ... }  
    CaloTimeSample convert (const CaloDataFrame& df, const double em) const { ... }  
...  
};
```

"a la" CaloDataFrame EdCoder::convert in EcalDetailed